1846MNRAS...7..176B

Astronomical Observations by Capt. Francis Blackwood, R.N.

Raine's Islet, N.E. Coast of New Holland { Lat. 11° 35′ 44″ S. Long. 144° 7′ E.

1844 July 2. Occultation of ν *Aquarii* at the moon's bright limb.

Immersion .... 15h 40m 15s·5 Local Mean Solar Time.
Emersion .... 17 0 33·0

Sept. 8. Occultation of *Venus.*

Total Immersion......... 23h 54m 27s·6 Local Mean Solar Time.

Victoria, Port Essington (Commandant's House .... { Lat. 11° 22′ 18″ S. Long. 132 11 E.

1845 Feb. 1. Occultation of *Mars.*

Total Immersion......... 20h 25m 13s·0 Local Mean Solar Time.

Nepean Island, Torres Straits .... { Lat. 9° 35′ S. Long. 143 45 E.

1845 March 27. Occultation of λ *Libræ* at the moon's dark limb.

Immersion......... 17h 33m 30s·5 Local Mean Solar Time.

Darnley Island .... { Lat. 9° 32′ S. Long. 143 50 E.

1845 May 24. Occultation of ϱ^1 *Sagittarii* by the moon's bright limb.

Immersion......... 17h 9m 51s·5 Local Mean Solar Time.

Solar Eclipse observed by Capt. Sir E. Home, R.N.

Kororaraka (South End), Bay of Islands, New Zealand .... { Lat. 35° 15′ S. Long. 174 20 E.

1845 Oct. 31. Final Contact 0h 1m 38s·0 Local Mean Solar Time.

Circumstances favourable.

Solar Eclipse observed by Commander Shadwell, R.N.

Garden Island, Sydney, N.S. Wales.... { Lat. 33° 51′ 50″ S. Long. 151 16 E.

1845 Oct. 30. Final Contact 22h 5m 31s·4 Local Mean Solar Time.

The Time at the place was accurately determined for all these Observations.

A Notice from Captain Ford of a difference between the Map of the Moon, published by Messrs. Baer and Mädler, and a Sketch made by himself on the 29th of July, 1827.

The part of the moon to which Captain Ford refers is the western half of *Mare Serenitatis*; the age of the moon was

Downloaded from http://mnras.oxfordjournals.org/ at D H Hill Library - Acquis S on March 18, 2015

© Royal Astronomical Society • Provided by the NASA Astrophysics Data System

1846MNRAS...7..177P

5d 19h 46m; the telescope employed a Gregorian reflector of 5 inches aperture, power 100. A drawing of the appearance of this portion, as seen by Captain Ford, accompanied his notice.

On Luminous Rings round Shadows. By the Rev. Baden Powell, Savilian Professor of Geometry, Oxford.

The remarkable optical phenomena attending total solar eclipses, especially the formation of a luminous ring round the disks, are now on the whole so well established, that speculations have been hazarded as to their cause; and though these speculations as yet scarcely amount to more than very general illustrations, yet as experimental facts have been elicited which seem to bear a resemblance to the phenomena in question, they deserve notice, even in the present uncertain state of the inquiry.

The author disclaims any idea of bringing forward such facts as a complete explanation, but he is induced to offer them because *one* experiment devised by him long since was thought by the late Mr. Baily worthy of being laid before the Society, though communicated to him without any such intention. (*Ast. Soc. Notices*, Mar. 10, 1843.)

The following is the author's historical summary of the observations of the luminous ring:—

The phenomenon appears to have been observed as early as the time of Plutarch, as appears by a passage from him cited in the *Comptes Rendus*, 1842, i. 847. In more modern times, probably the earliest recorded instance is in the eclipse of 1567 [This is clearly wrong in date or name], observed by Kepler. The ring was observed at Naples in 1605 (*Phil. Trans.* vol. xl. 177), and from the year 1706 we have the full and well-known records of the most eminent astronomers down to the present day, which establish the phenomenon as a regular part of the appearance of a total eclipse. The author refers to instances in the *Mem. Ast. Soc.* vol. i. 144, and vol. x. 9–16, 37, &c., and to the *Notices* of this Society, vol. v. 207; as also to the *Comptes Rendus* for 1842, parts i. and ii. He remarks that remarkable discrepancies are found in the accounts of the same, as well as of different eclipses, and he mentions instances. Some of these discrepancies admit of easy explanation. In the transit of *Venus* in 1769, light was seen surrounding the part of the planet *off* the sun, both at immersion and emersion; but this has been ascribed to her atmosphere. (*Ast. Soc. Mem.* vol. x. 27.) The singular *protuberances* observed in the eclipses of 1733 and 1842 do not seem to belong to the ring, and it seems to the author hardly conceivable that they can be purely optical phenomena, as suggested by M. Valz and M. Arago.

The author next gives an account of the attempts of different astronomers to assign *a cause* for the luminous ring. Kepler considered it to be due either to combustion round the sun, or to refraction of his rays by the moon's atmosphere. Others have more generally attributed it to some peculiar effect of the solar atmo-

Downloaded from http://mnras.oxfordjournals.org/ at D H Hill Library - Acquis S on March 18, 2015

© Royal Astronomical Society • Provided by the NASA Astrophysics Data System